UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,355	03/21/2001	Robert Warren Sherburne JR.		3657

38236 7590 04/30/2004

DOMINIK J. SCHMIDT
P.O. BOX 20541
STANDFORD, CA 94309

EXAMINER	
CAO, CHUN	

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/814,355	SHERBURNE, ROBERT WARRE	
	Examiner	Art Unit	
	Chun Cao	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *11-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title is imprecise.

Election/Restriction

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-10, drawn to: controlling clock frequency of each of the processing unit to optimize speed and processing power for a task, in class 713, subclass 322.

II. Claims 11-20, drawn to: inputting vary of clock frequency to the processing unit and the buffers based on the fill status of the buffers, classified in class 713, subclass 600.

The inventions are distinct, each from the other because of the following reasons:

a. These inventions have acquired a separate status in the art as shown by their different classification;

b. The search required for one Group is not required for the other Groups for the reasons above restriction for examination purpose as indicated is proper.

4. During a telephone conversation on April 6, 2004, Mr. Dominik J. Schmidt elected without traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this office action. Claims 11-20

are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

Drawings

6. The drawings were received on 8/27/01. These drawings are acceptable.

Double Patenting

7. The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent, the possible harassment by multiple assignees, and the possibility that one might avoid the effect of file wrapper estoppel by filing a second application. *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) and © may

be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-3 rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of copending Application No. 09/837,651. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are directed to substantially the same invention including one or more processing units and a clock controller varying the clock frequency to each processing unit. Although claims 1-3 of the copending Application do not recite the processor core including a memory, it is well known that processor core routinely include a memory unit.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "each unit" in line 2 ; "the unit" in line 3; "the controller" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claims 1-10 are rejected because they incorporate the deficiencies of claim 1.

Claim 4 recites the limitation "the controller" in lines 2-3, 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitations "the controller" in line 3. There is insufficient antecedent basis for this limitation in the claim. In claim 7, as to the claimed language "the buffer" is unclear whether "the buffer" refers to the buffer in claim 4 or the second buffer in claim 7. The examiner interpreted "the buffer" as the second buffer for examination purpose. Applicant is welcome to provide feed back in the next response to clarify the issue.

Claims 8 and 9 recite the limitations "first and second buffers" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 10, it is unclear whether each CPU comprises random access memories or random access memories coupled to CPU.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 2 and 4-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohmori (Ohmori), US patent no. 6,647,502.

As per claim 1, Ohmori discloses a low power a reconfigurable processor core [fig. 1, col. 8, lines 34-36], comprising:

one or more processing units [modules 4, 6, fig. 1; col. 4, lines 45-47], each processing unit having a clock input that controls the performance of the processing unit; one or more clock controllers [7, 8, fig. 1] having clock outputs coupled to the clock inputs of the processing units [col. 3, lines 39-40, 52-54], the clock controller operating varying the clock frequency of each processing unit to optimize speed and processing power for a task [col. 3, line 64-col. 4, line 4; col. 9, lines 33-35, 44-47]; and

a high-density memory array core [3, 5, fig. 1] coupled to the processing units [col. 3, lines 26-27].

As per claim 2, inherently, Ohmori discloses that the reconfigurable processor core includes one or more digital signal processor [fig. 1; col. 8, lines 34-36, emphasis added "a processor...processes graphic data, audio data...].

As per claim 4, Ohmori discloses that the processing unit [modules 4, 6] includes a central processing unit (CPU) [col. 8, lines 34-36] having a clock input coupled to the clock controller; and a buffer [3, 5, fig. 1] adapted to be read by the CPU, the buffer having a clock input coupled to the clock controller [fig. 1; col. 3, lines 38-56; col. 8, lines

22-25].

As per claim 5, Ohmori discloses the CPU and the buffer are commonly clocked [fig. 1; col. 3, lines 38-41].

As per claim 6, Ohmori discloses the CPU and the buffer are separately clocked [fig. 1; col. 3, lines 38-56].

As per claim 7, Ohmori discloses that a second buffer adapted to receive data from the CPU, the second buffer having a clock input coupled to the clock controller [col. 3, lines 49-56; col. 8, lines 62-65].

As per claim 8, Ohmori discloses that the CPU, the buffer and the second buffer are commonly clocked [fig. 1; col. 3, lines 38-56].

As per claim 9, Ohmori discloses that the CPU, the buffer and the second buffer are separately clocked [fig. 1; col. 3, lines 38-56].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmori (Ohmori), US patent no. 6,647,502 in view of Nishiyama et al. (Nishiyama), US Patent no. 5,790,877.

As per claim 3, Ohmori fails to explicitly discloses the reconfigurable processor core includes one or more reduced instruction set computer (RISC) processors.

Nishiyama discloses one of the processing unit comprises a RISC processor [col. 3, lines 35-42].

It would have been obvious to one of ordinary skill in the art at time the invention to combine the teachings of Ohmori and Nishiyama because they are both directed to the problem of reducing the power consumption of a processor core, and the specify teachings of Nishiyama stated above would have allowed for greater processing capabilities by using the RISC processor to improve the functionality of Ohmori's system.

As per claim 10, Nishiyama further discloses that the processor core comprises a private instruction random access memory coupled to the CPU; and a private data random access memory coupled to the CPU [fig. 1; col. 3, lines 45-50].

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Georgiou et al., US patent no. 6,047,248, discloses a processing unit comprises a plurality of DSP [col. 3, lines 48-65].

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao at (703) 308-6106. The examiner can normally be reached on Monday-Friday from 7:30 am - 4:00 pm. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor Thomas Lee can be reached at (703) 305-9717. The fax number for this Art Unit is following: Official (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 306-5631.

Chun Cao

Apr. 8, 2004